SESSION I
HOST DEFENSES
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Ubiquitin and Ubiquitin-like Modifications in Viral Infection and Immunity Workshop

SESSION I: Host Defenses HIGHLIGHTS

- Viruses and bacteria hijack various components of the UPS (e.g. Vif-Cul5, E4orf6/E1b55-Cul5, V-Cul4, HBX-Cul4, Vpr-Cul4, E6/E6-AP, poxvirus BTBs-Cul3)
- Viruses have evolved mechanisms to inhibit or redirect cellular DNA damage response pathways to their benefit (e.g. E4orf6/E1b55, ICP0)
- Ubiquitin and UBL modifications regulate many important virus-host cell interactions

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Research Opportunities & New Directions

- UPS structural landscape is rich with interaction surfaces for viral proteins; these provide opportunities for HTS to identify small molecule inhibitors
- Number of proteins dedicated to UPS and ubiquitin-like protein systems is quite large; viruses can provide tools to further probe these cell biological systems and cellular targets
- DUBs and other deconjugating enzymes are an understudied area in UPS system and as viral interacting molecules

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SESSION I: Host Defenses Discussion Topics

- Viral protein interactions with UPS components are complex and can block activities, hijack activities, or a combination of both
- Virus entry and early post entry events are regulated by the ubiquitin/UBL/UPS systems, suggesting potential therapeutic targets
- Need combination of biochemistry and cell biology to understand links to pathogenesis
- The interface of viruses and the UPS provides many opportunities for research on pathogenic viruses as well as fundamental cellular processes